

AMENDMENT TO THE CLAIMS

Please amend the following pending claims:

1.(Previously Presented) Apparatus for monitoring the effect on a material of exposure to a fluid, said apparatus comprising a sensor element formed as a closed ring of the material, wherein said ring is mounted coaxially in a section of pipe for carrying said fluid, so as to be exposed to said fluid, and is electrically insulated from said pipe, and a resistance monitor coupled to monitor changes in electrical resistance in said ring sensor element.

2.(Original) Apparatus as claimed in Claim 1 further comprising a reference element, said reference element being formed also as a ring, mounted coaxially in said pipe section and insulated therefrom, said second ring element being protected from exposure to said fluid.

3.(Original) Apparatus as claimed in claim 2, wherein said sensor and reference elements each comprise at least one pair of diametrically opposed electrical connection points.

4.(Original) Apparatus as claimed in claim 3, wherein each of said elements comprises a predetermined number of pairs of diametrically opposed connection points, said connection points on each element being regularly spaced around the respective ring.

5.(Previously Presented) Apparatus as claimed in claim 4, wherein said sensor and reference element are connected in series by respective pairs of said diametrically opposed connection points, and said resistance monitor is arranged to determine the ratio of the resistances of said elements.

6.(Previously Presented) Apparatus as claimed in claim 5, wherein said resistance monitor is arranged to drive a current through said series connected elements and to pick off voltage values from the various connection points.

7.(Previously Presented) Apparatus as claimed in claim 6, wherein said resistance monitor is arranged to make at least one further set of measurements by reconnecting the elements in series by different pairs of diametrically opposed connection points, driving a current through the series connected elements and picking off a further set of voltage values from the various connection points.

8.(Previously Presented) Apparatus as claimed in claim 2, wherein said elements are coaxially spaced apart by a spacer ring.

9.(Original) Apparatus as claimed in Claim 8, wherein said spacer ring comprises a pressure sensor.

10.(Previously Presented) Apparatus as claimed in claim 1, wherein at least said sensor element comprises a section cut from said pipe.

11.(New) Apparatus for monitoring the effect on a material of exposure to a fluid, said apparatus comprising a sensor element formed as a closed ring of the material, wherein said ring is mounted coaxially in a section of pipe for carrying said fluid, so as to be exposed to said fluid, and is electrically insulated from said pipe, and a resistance monitor coupled to selectively monitor changes in electrical resistance in a plurality of sectors of said ring sensor element.